CLAIMS

I claim:

1. A system adapted to move a carrier from one of a plurality of initial locations to a common terminal location; the carrier having a length; the system comprising:

a plurality of first sending units, each first sending unit defining one of the initial locations;

a receiving unit disposed at the common terminal location; and

a first duct system extending from each of the first sending units to the receiving unit; the first duct system adapted to allow a carrier to be moved from any one of the first sending units to the receiving unit.

2. The pneumatic delivery system of Claim 1, wherein the first duct system includes:

a first trunk line having an outlet;

the outlet of the first trunk line being disposed at the receiving unit; and

a plurality of first branches connected to the first trunk line;

each of the first branches having an inlet disposed at one of the first sending units.

3. The pneumatic delivery system of Claim 2, further comprising:

a first power unit in fluid communication with the first duct system;

the first power unit applying a reduced fluid pressure to the first duct system;

the reduced fluid pressure being adapted to transfer the carrier from the one of the initial locations to the terminal location.

4. The system of claim 3, wherein the first power unit applies a reduced fluid pressure to the first trunk line.

5. The system of Claim 1, further comprising:

a first power unit having a vacuum source and a braking tube;

the braking tube being formed with an elongated braking channel, an upper pillow opening, and a lower pillow opening;

the braking channel being in fluid communication with the first duct system;

the upper and lower pillow openings being in fluid communication with the braking channel;

the upper and lower pillow openings being longitudinally spaced apart a first distance from one another along the braking channel;

the first distance adapted to be at least as long as the length of the carrier;

the vacuum source being in fluid communication with the braking channel through the upper and lower pillow openings;

the vacuum source applying a reduced fluid pressure to the braking channel through the upper and lower pillow openings.

6. The system of Claim 5, further comprising:

a vacuum jacket in fluid communication with the vacuum source and the upper and lower pillow openings;

the vacuum source applying a reduced fluid pressure to the braking channel by applying a reduced fluid pressure to the vacuum jacket.

7. The system of Claim 1, further comprising a first power unit attachable to the receiving unit.

8. The system of Claim 7, further comprising a first seal interposed between the first power unit and the receiving unit.

9. The system of Claim 1, wherein each of the first sending units defines an insertion opening in fluid communication with the first duct system; each of the first sending units further including:

an insertion door movable between a sealed position and a delivery position; and

the insertion door substantially preventing the flow of fluid through the insertion opening into the first duct system when in the sealed position.

10. The system of Claim 9, wherein each first sending unit further includes:

a sending locking mechanism being movable between a de-energized position and an energized position;

the insertion door movable between the sealed and delivery positions when the sending locking mechanism in the de-energized position; and

the energized position of the sending locking mechanism adapted to hold the insertion door in the sealed position.

11. The system of Claim 10, wherein each sending locking mechanism includes a solenoid configured to move the locking mechanism between the de-energized and energized positions.

12. The system of Claim 11, wherein each sending locking mechanism further includes a locking cam, the locking cam being pivotally mounted on the first sending unit, the locking cam being pivoted by the solenoid.

13. The system of claim 10, wherein the sending locking mechanism of one of the first sending units is in communication with at least one other sending locking mechanism.

14. The system of Claim 10, wherein each first sending unit further includes:

a sending switch having open and closed positions; and

the sending switch being in communication with the sending locking mechanism of at least one other first sending unit.

15. The system of Claim 10, further comprising:

a first power unit in fluid communication with the first duct system;

the first power unit selectively applying a reduced fluid pressure to the first duct system;

the reduced fluid pressure being adapted to transfer the carrier from the one of the initial locations to the terminal location;

the first power unit being switchable between an on position and an off position;

the on position of the first power unit corresponding with application of the reduced fluid pressure; and

the on position of the first power unit corresponding with at least one of the sending switches being in the closed position.

16. The system of Claim 10, wherein the receiving unit is formed with a first reception cavity and a removal opening, the first reception cavity adapted to receive the carrier from the first duct system, the removal opening adapted to provide communication between the first reception cavity and the exterior of the receiving unit.

17. The system of Claim 16, wherein the first duct system is in fluid communication with the first reception cavity and further comprising an access door movable between an open position and a closed position, the access door adapted to permit access to the first reception cavity from the exterior of the receiving unit when in the open position, the access door adapted to prevent fluid communication between the exterior of the receiving unit and the first reception cavity when in the closed position.

18. The system of Claim 17, wherein the receiving unit further includes a receiving switch movable between an open position and a closed position;

the open position of the receiving switch corresponding with the open position of the access door;

the closed position of the receiving switch corresponding with the closed position of the access door;

all of the sending locking mechanisms of the first sending units being in the energized position when the receiving switch is in the open position; and

all of the sending locking mechanisms of the first sending units being in the de-energized position when the receiving switch is in the closed position.

19. The system of Claim 18, wherein each first sending unit further includes a sending switch and wherein the receiving unit includes a receiving locking mechanism;

the receiving locking mechanism being movable between a de-energized position and an energized position;

the receiving locking mechanism in the de-energized position permitting the access door to move between the open and closed positions;

the receiving locking mechanism in the energized position preventing the access door in the closed position from moving away from the closed position;

each sending switch being operable between an open position and a closed position;

the de-energized position of the receiving locking mechanism and all of the sending locking mechanisms of the first sending units corresponding with all of the sending switches being in the open position and the receiving switch being in the closed position;

the closed position of the sending switch of any one of the first sending units corresponding with the receiving locking mechanism and the sending locking mechanisms of at least the other of the first sending units being in the energized position; and

the open position of the receiving switch corresponding with all of the sending locking mechanisms being in the energized position.

20. The system of Claim 1, further comprising:

a plurality of second sending units and a second duct system;

each second sending unit adapted to be disposed at one of the initial locations different than any initial location occupied by one of the first sending units;

the second duct system allowing one-way fluid communication from each second sending unit to the receiving unit;

the second duct system adapted to accommodate the carrier therethrough in transferring the carrier from the one of the plurality of initial locations to the terminal location.

21. The system of Claim 20, further comprising:

a second power unit in fluid communication with the second duct system;

the second power unit applying a reduced fluid pressure to the second duct system;

the reduced fluid pressure being adapted to transfer the carrier from the one of the initial locations to the terminal location.

22. A method for pneumatically transferring a carrier from one of a plurality of initial locations to a terminal location, the method comprising the steps of:

inserting the carrier into one of a plurality of sending units, the sending units each selectively allowing fluid communication between the exterior of the sending unit and a duct system, the duct system allowing one-way fluid communication from each sending unit to a single receiving unit;

transferring the carrier through the duct system; and

receiving the carrier at the receiving unit.

23. The method of Claim 22, further comprising the step of sealing the other of the plurality of sending units to prevent fluid communication between the exteriors of the other of the plurality of sending units and the duct system.